

## CLAIMS

1. A method of enhancing a content that comprises contiguous blocks containing a program stream and interleaved blocks containing interleaved program streams, said program streams being readable independently of one another, any occurrence of consecutive interleaved blocks in said content being forbidden, said method comprising a step of processing an original block of said content so as to interleave at least one enhancement program stream associated with at least one original program stream of said original block, said original program stream comprising original program units, and said enhancement program stream comprising enhancement program units, an original program unit being associated with an enhancement program unit, said processing step comprising:

a) if said original block is a contiguous block:

- checking whether interleaving of said enhancement program stream(s) into said original block would lead to an occurrence of consecutive interleaved blocks in said content, and in such a case,

- splitting said original contiguous block into a main block and at least one contiguous separation block,

- using said contiguous separation block(s) to separate said consecutive interleaved blocks,

- interleaving the enhancement program units associated with the original program units of said main block, if any, into said main block,

- interleaving the enhancement program units associated with the original program units of a contiguous separation block, if any, into an interleaved block that is adjacent to said contiguous separation block,

b) in other cases, interleaving said enhancement program stream into said original block;

c) adding a pointer in said original program units that points to the enhancement program unit it is associated with.

2. A method of enhancing a content as claimed in claim 1, wherein the enhancement program unit(s) associated with the original program unit(s) of a contiguous separation block is (are) interleaved into the interleaved block that precedes said contiguous separation block.

3. A method of enhancing a content as claimed in claim 1, wherein said separation block(s) comprise a number of original program units such that said contiguous separation block(s) have the smallest allowed size.

5 4. A computer program comprising instructions for implementing a method of enhancing a content as claimed in one of claims 1 to 3 when said program is executed by a microprocessor.

10 5. An authoring system comprising storage means for storing a program comprising instructions for implementing a method as claimed in one of claims 1 to 3 of enhancing an original content with at least an enhancement program stream, and processing means for executing said program so as to provide an enhanced content.

15 6. A data carrier storing an enhanced signal obtained by applying a method of enhancing a content as claimed in one of claims 1 to 3.

7. A signal obtained by applying a method of enhancing a content as claimed in one of claims 1 to 3.

20 8. A data carrier storing a signal comprising:  
- contiguous blocks containing a program stream and interleaved blocks containing interleaved program streams,  
- amongst said interleaved blocks, enhanced interleaved blocks comprising at least an original program stream comprising original program units and an associated enhancement  
25 program stream comprising enhancement program units, said original program units each comprising a pointer pointing to the enhancement program unit it is associated with,  
- and amongst said contiguous blocks, separation blocks separating a preceding interleaved block and a following interleaved block, said separation blocks comprising one or more original program unit(s) of an original program stream, one of said preceding and following  
30 interleaved blocks comprising one or more enhancement program unit(s) associated with said original program unit(s), said original program unit(s) each comprising a pointer pointing to the enhancement program unit it is associated with.

9. A signal comprising:

- contiguous blocks containing a program stream and interleaved blocks containing interleaved program streams,

- amongst said interleaved blocks, enhanced interleaved blocks comprising at least an

5 original program stream comprising original program units and an associated enhancement program stream comprising enhancement program units, said original program units each comprising a pointer pointing to the enhancement program unit it is associated with,

- and amongst said contiguous blocks, separation blocks separating a preceding interleaved block and a following interleaved block, said separation blocks comprising one or more

10 original program unit(s) of an original program stream, one of said preceding and following interleaved blocks comprising one or more enhancement program unit(s) associated with said original program unit(s), said original program unit(s) each comprising a pointer pointing to the enhancement program unit it is associated with.

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10. A device for reading a signal comprising original program units and enhancement program units associated with said original program units, said original program units each comprising a pointer pointing to the enhancement program unit it is associated with, said device being designed for retrieving the enhancement program unit associated with an

20 original program unit via said pointer and for processing said original program units together with the associated enhancement program units for the purpose of rendering an enhanced content.